



The purpose of this health trend map is to inform, identify gaps and serve as a score card to the health-related business community of Louisville.

- State of Health / Consumerism
- Markets
- Technology
- Policy Issues & Regulatory Environment

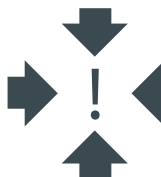
hotspot (Offers a call to action)



landmarks (Facts about Louisville or the healthcare system)



tension



emerging issues



### STATE OF HEALTH / CONSUMERISM

Personalized Medicine (e.g. Pharmacogenetics, Louisville's PGX Labs)

Consumerism

Consumers don't know where to get information (out of pocket payments, deductibles, etc)

Need for care vs. Hassles associated with 'using' services, e.g., repeated registration and medical history forms "time value /efficiency"

### MARKETS

Hot Industry Sectors: Life Science Research (Brown Cancer Center, Cardiovascular Innovation Institute, Kleinert, Kutz & Associates and Institute for Cellular Therapeutics)

Hot Industry Sectors: Life Science Manufacturing and Supply Chain (MedVenture Technology Corp., Amgen Distribution Center, Genentech Distribution Center, UPS, Red Cross, Amerisource, Omnicare)

Startup Infrastructure in Louisville - LMCDC / MetaCyte KY Seed Capital; DCI, Triathlon Medical Venture Partners

Pharma Business model is changing: Financial rewards are increasing for developing real 'cures' more than treatment of disorders

Internet based medical information

Integration of disease management and treatment

Health Tourism - Louisville as a destination for Healthcare (e.g. Hand Transplant, Heart Implant, Kleinert, Kutz; Fellows, Training, Surgeries.)

Increase in retail providers decrease costs

Re-use tobacco farms for growing organic foods

Doctor believes he/she is in charge of health care but consumers want to be fully informed and involved in the decisions.

Retailers & Manufacturers are moving into healthcare (Samsung, Sony, Best Buy, Circuit City)

Predictive, Preventative Tools

Cell Therapy (Regenex, Rhinocyte)

Cost of innovation - adapting to new approaches to new drugs and treatment. Drug Discovery process is unproductive and expensive. Opportunities in productivity enhancement.

Push for disintermediation by China, Korea, etc.

CASE STUDY 3 - Medventure & Aptamera. Focus - Comparing rapidly evolving life science operations.

Leverage technology to Offshore medical Services: Does Louisville benefit or lose out? e.g. teleradio = cost savings

Home Diagnostics: in-home networks providing health data to consumers

Health monitoring creates a different world of health care - (Humana start-up, Sensei is the tip of the iceberg)

From Centralized to decentralized diagnostic services: Proliferation of diagnostic centers does not follow population, e.g. Louisville's east end facilities improve and develop while other communities remain stable or decline slightly)

Transparency vs. proprietary interest vs. information overload

### INSTITUTIONAL & ANCILLARY PROVIDERS (HOSPITALS, LONG TERM CARE, IMAGING CENTERS, HOME HEALTH, HOSPICES)

Increased Demand: Aging - Environment - Life Style. Louisville's "Boomer" population is larger than similar cities. Opportunity or threat?

CASE STUDY 4 - Vencor's acquisition of Hillhaven. Focus - Small company acquires a large company to add new product lines

CASE STUDY 5 - Humana & Galen Split. Focus - Learning that a product line will not work

CASE STUDY 6 - Humana's takeover of UofL Hospital. Focus - Managing complex relationships

Price sensitivity & demand for an increase in quality as cost shift or become more transparent. Payment for quality

Potential Consolidation of medical centers-of-excellence from across the state: Is there a benefit?

Consumer model could increase costs and shrink provider services

Challenges for hospitals: 1) Declining governmental payments combined with increasing number of uninsured and increasing costs of compliance with rules and regulations 2) Shortage of qualified health care workers 3) Increased funding needs, e.g., IT

Louisville Success Stories: (Merit Health System, Trilogy Health Services, Atria Senior Living Group)

Hospital specialization: 1) Shipping out ancillary services 2) Competition between physicians and hospitals for diagnostic services and specialty hospitals/surgical centers 3) Small specialty hospitals vs. large hospitals compete for talent and resources

Louisville is a center of excellence in " Elder Health" business (e.g., Kindred, Humana, Atria, Ventas & other entrepreneurial businesses)

As portable devices and sensors become more prevalent, protecting and securing the data will become an increased issue (HIPAA)

### PROFESSIONAL, CONSULTING & SUPPORT SERVICES

Competition through Globalization

"Plaintiff's" Bar and Litigious consumers vs. tort reform

Louisville Success stories: SHPS, Trover Solutions, META Associates

Regulatory environment creates business opportunities

Payer/Provider consolidation

Healthcare Services: Increase in outsourcing of support services

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CASE STUDY 2 - Data Advantage. Focus - Becoming a new, small company vs. forming a new division at a large company.

### HEALTH BENEFIT PLANS (INSURERS, PAYERS, EMPLOYERS)

Employers dropping insurance

Consumerism business vs. uninsured neglected population

Rising costs of healthcare vs. consumer willingness and ability to pay.

Kentucky is at or near the bottom of the list on seven major categories of wellness: lack of exercise, adults who smoke, teen tobacco use, cancer deaths, deaths from all causes, cardiovascular disease and obesity

Changing / Modifying consumer behavior

Changing Definition of Healthcare

Incentivizing healthy food / healthy behaviors

45 mm Americans have no insurance and access care though clinics and the emergency room

Industry consolidation

Centralized electronic health records

Pay for performance

Consumers / workers can't afford insurance

High deductible plans increase the consumer's interest in healthcare costs vs. ability to 'shop' for quality care that has low cost provider

Finding technology that helps make consumers into prudent purchasers

Health privacy vs. security

Medicare modernization act = economic growth in Louisville... What is the multiplier effect of these new dollars?

Continued effect of cost shifting (The Wal-Mart bill)

Tax incentives related to healthcare costs are different between employers and consumers

### BANKS & INVESTORS

Health Savings Accounts

Twofold+ increase in market cap of Louisville's publicly traded health care firms

Increased venture capital from \$9mm in 1994 to \$368mm in 2004

Bucks for Brains - Companies emerging from their labs

Access to capital for hospital infrastructure and facilities, diagnostics, etc.

CASE STUDY 1 - Emergint & Zirmed. Focus - capital raising process for de novo startups

CASE STUDY 9 - Information Technology and Life Sciences. Focus - How to evaluate technologies / process for growing new companies.

Hot Industry sectors: Health-related IT; Allscripts, Zirmed

Move from bottom of health status to top of list

Local support for entrepreneurship vs. conservative community

Not many entrepreneurial role models

Lack of productivity in the traditional system; global supply

### HEALTH PROFESSIONALS (MD OFFICES, COMPLEMENTARY & ALTERNATIVE MEDICINE)

Increased outpatient services / Urgent Care facilities and kiosks

Increased workforce productivity

Concierge Medicine

Defensive Medicine leads to increased burden on the consumer to manage their own care

Focus on Medicare (effect on access to capital)

Cost pressures among/between providers, insurers, government & employers

Shortage of specialist MDs drives up cost

Doctors feeling under compensated

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### GOVERNMENT & ASSOCIATIONS

Right to die (Schiavo case, Hugh Finn case, Oregon assisted suicide law, etc)

Bucks for Brains - funding

Air Pollution and its effect on our health.

Increased use of methamphetamines

Is health care and insurance an entitlement vs. a privilege

City of Parks: Exercise friendly city

Baby boomers retiring

Use of tax deferred money for health care and over the counter spending

Medicare Reform (how to really pay for it)

Hillary plants seeds of health reform

Malpractice reform

Government regulation

Culture of risk aversion

Embrace education as central driver of economy

Attract and retain base of diverse professionals

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### HUMAN CAPITAL / EDUCATIONAL INSTITUTIONS

Engaging schools to change behaviors to address obesity

Consolidation / increasing entrepreneurs in the community

Shortage of allied health workers, nurses, physicians, etc and instructors for the same VS opportunities in education and training, e.g., Sullivan/Spencerfan and Galen

Grant given to JCPs for more education will impact healthcare, awareness of health choices, etc.

Bucks for Brains - recruiting

Health is big business in Louisville: Louisville's health-related market has 72,000 workers, \$2.3 bb in payroll, \$248 mm in taxes, 2,500 companies

Louisville's employment base: Manufacturing has 129,000 workers, Health-related business has 72,000 workers, logistics has 64,000 workers

Where Louisville ranks in health services payroll: Nashville 11.1%, Louisville 10.6%, Memphis, 9.8 %, Indianapolis 8.9%, Cincinnati 8.7%, Jacksonville 8.1%, Kansas City 8.0%, Columbus 7.5%, Charlotte 5.6%

Louisville getting more educated and younger

Louisville Not growing as fast as our competition in: people/talent, capital

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### POLICY ISSUES AND REGULATORY ENVIRONMENT

Case Study #7: Reimbursement & Regulatory Issues. Focus: State & Federal Healthcare policies